Bin Materials Audit

Average results from 32 Pre-school sites

From 2006 to the end of 2016

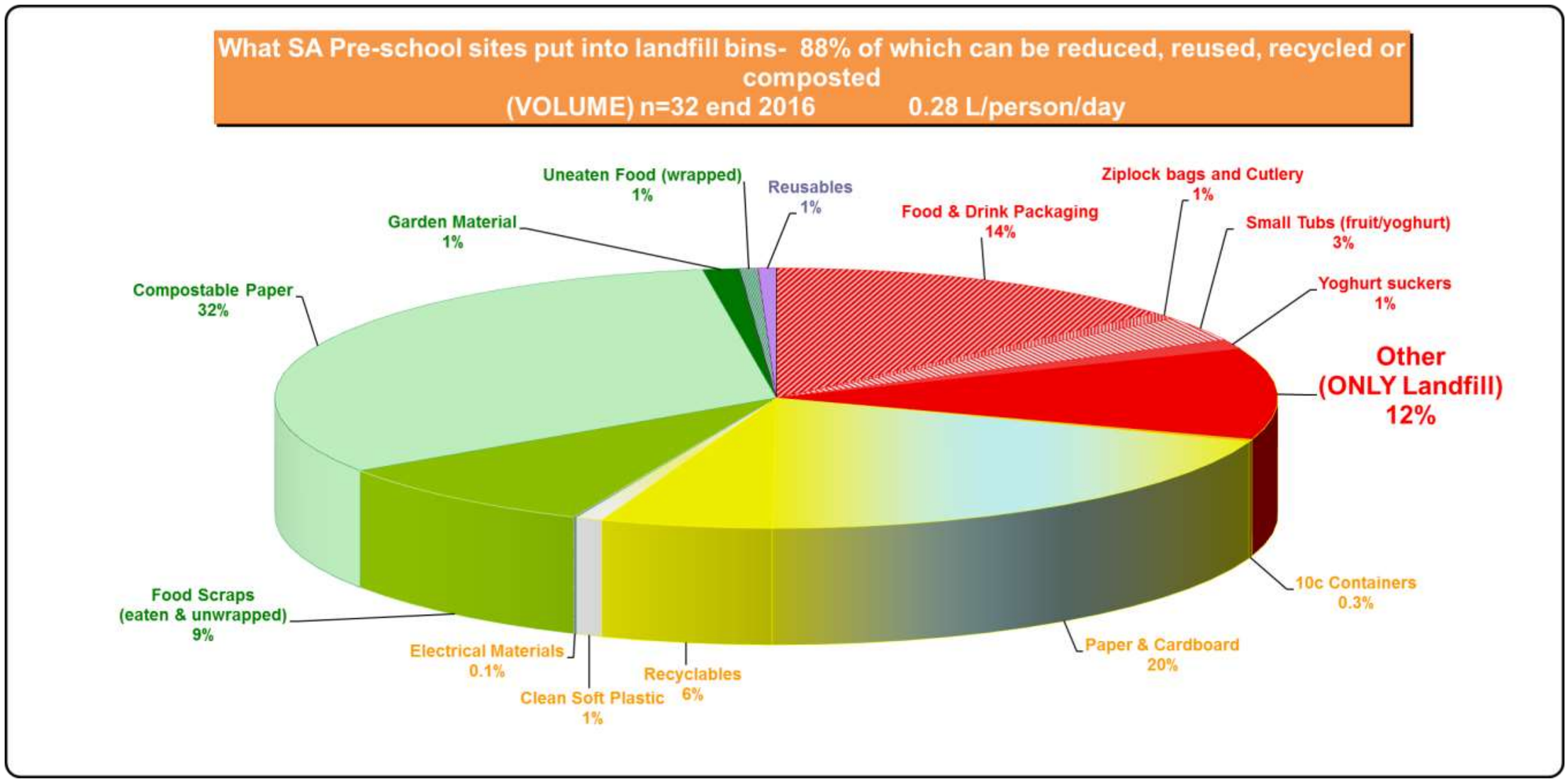
Wipe out Waste

Currently **332 Litres** per day are going to landfill for **1 290** people

This is equivalent to **0.28 Litres** per person per day.

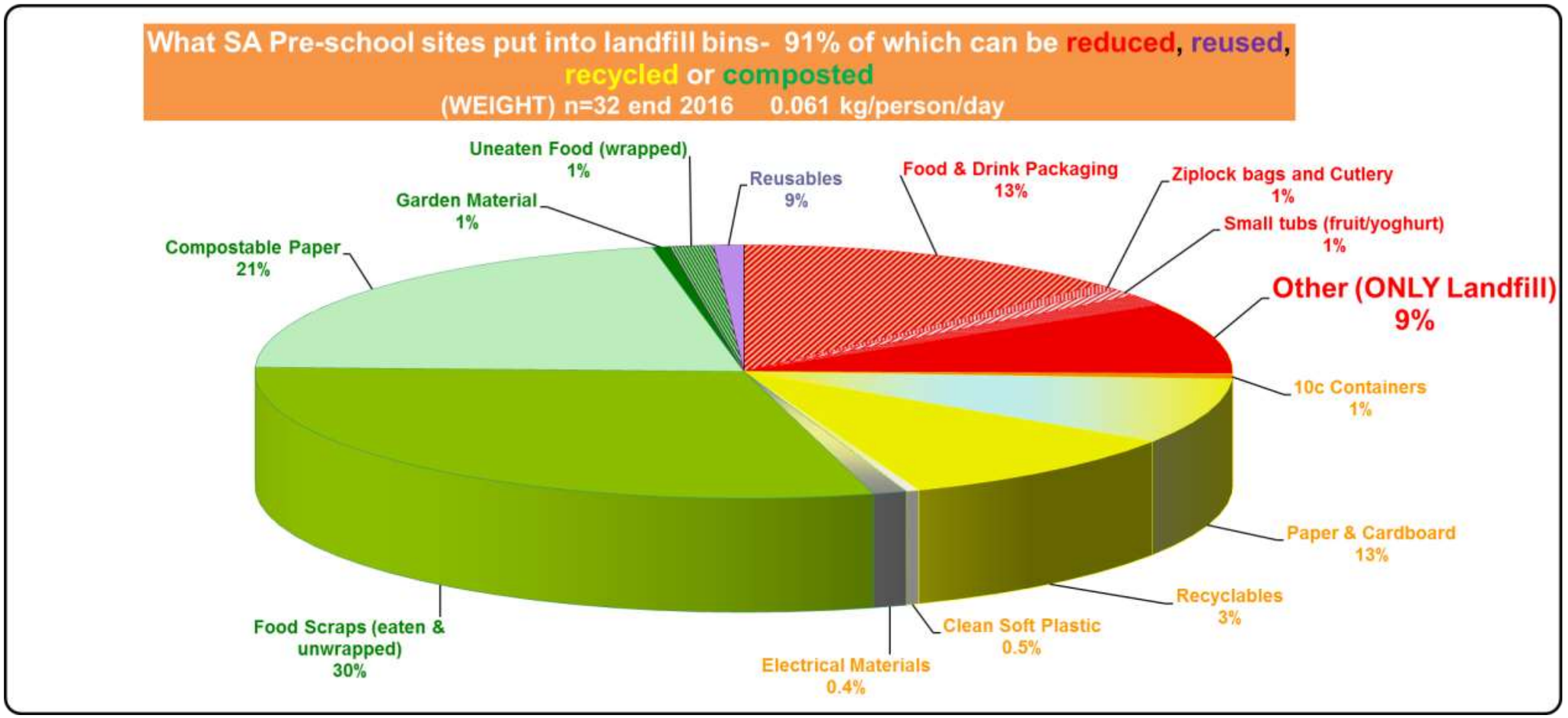
HOWEVER – only **40 Litres (1.25 L/site)** HAS to go to landfill.

By **reducing**, **reusing** and **recycling** SA Preschool sites **could reduce their waste to landfill by 88%.**



During a WOW audit, the materials are measured by volume and weight. Often information relating to landfill, recycling and resource recovery is reported by weight, as this is how we pay for landfill in metropolitan areas. We believe that volume is a more useful measure for education sites as this determines how many bins are required and also how much space in the landfill the materials will take up. Throughout this report, the volume measure is more prominent; however the weight is referred to in a few cases. The raw data and excel tables and charts have also been sent to your site. These can be used for additional classroom learning opportunities, such as a comparison and discussion around units of measurement and specifically the weight and volume.

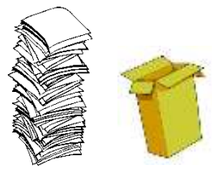
The table below indicates the materials found in bins, by WEIGHT. While we don't CURRENTLY consider this to be as useful a unit of measurement for sites (this may change when the increased landfill levy may affect the way sites are charged for collections). Comparing heavy items (eg Food scraps with their volume) can be particularly dramatic! This may the prompt the question: which unit of measurement provides us with the most useful information? This is a very important factor in developing experiments and surveys. This questioning could also be applied to information about recycling (eg some councils have high recycling rates- by weight- as they may generate more glass items than other areas which may have a higher volume- eg plastics and cardboard). Several follow up activities are at http://www.wow.sa.gov.au/bin-materials-audit-bma.html
You could do weight vs volume recycling activities as homework or between classes or areas of your site.



Recyclable Materials - 27% of the total volume of materials to landfill

14 340 Litres/year of recyclable materials could be recovered from the landfill bins **(from 32 sites audited).**

Recyclable materials are things that could be reprocessed and turned into products again, instead of going to landfill.



Paper/Cardboard

463 L/site/yr which makes up **20%** of the total **volume** of materials in the landfill bins.

10c Containers

0.3 containers/day/site*
Or 2/person/year

* based on averaged 2016 audit data (n= 3)

Clean Soft Plastic

This mostly comes from libraries, canteens and offices.
21 L/site/yr was found in the landfill bins.

Recyclables

Commonly found in OSHC, school canteens, home economics areas, and staff rooms where there is access to water for rinsing.
129 L/site/yr which makes up **6%** of the total **volume** of materials in the landfill bins

Electrical Materials

This is a growing global issue. Electrical materials should be disposed of correctly and safely.
There was **1.9 L/site/yr of electrical materials** that **MUST BE** disposed of differently.

Compostable Materials - 43% of the total volume of materials to landfill

3 126 Litres, 8 400 kg/yr (54% total weight) of compostable items could be recovered from landfill bins **(from 32 sites audited).**

Compostable items are things that once grew and can be returned to the earth as compost to help more things grow.

The type of composting system and ability to compost on site will depend on the size of your site and conditions specific to your area.

Food Scraps

210 L/site/yr of the landfill bins were food scraps - **9%** of the total **volume** of materials in landfill bins.

However, food scraps are some of the heaviest landfill items, weighing in at **152 kg/site/yr - 30%** of total **weight.**

Compostable Paper

This consists of paper towel, tissues and paper bags.
70 L/site/yr
32% of total **volume**.

Garden Material

13.5 L/site/yr of garden materials were in the landfill bins. This commonly consists of flowers from staff areas, leaves and twigs.

Recycling - 555 L/site/year

Paper/Cardboard recycling: **The average for paper/card found in landfill bins is 20%,** with **463 L/site/year** going to landfill rather than being recycled each year. Regular reminders to staff, ensuring paper recycling bins are provided next to all office bins and containers are consistent in all rooms will help further reduce this stream.

10c Containers: An average of **0.3 containers** were found in landfill bins at Pre-school sites audited in 2016 (n=3). Given this is such a low quantity and usually come from staff, we recommend staff either take home their cans/bottles, or add them to the regular recycling onsite.

Clean Soft Plastic: Based on audit results, this is **21 L/site/year**. This can be collected to take to local supermarket collections (currently) to be made into recycled plastic furniture and boardwalks- a better option than sending plastic to landfill. Your contractor may offer a collection service for this material.

Recyclables: An average of **129 L/site/year** of recyclables are found in Pre-school landfills. Most Pre-schools are small enough for these items to be rinsed or wiped to ensure they are empty and dry enough for recycling. This means they can be collected and placed in your yellow-topped recycling bin.

Electrical Materials: It is important to be aware of safe disposal methods as **Electrical items (anything with a battery or cord) and Fluoro tubes are banned from landfill and MUST NOT go into school skips or bins. For more information on e-materials disposal see** www.epa.sa.gov.au/community/waste_and_recycling/e_waste

Fines from $300 to $30 000 can apply for inappropriate disposal.

Composting - 1 008 L/site/year

Food Scraps: **9% of total material being sent to landfill is the average figure for Pre-school schools**. This is an average of **5.3 L/site/ week**. Collection containers could be placed next to bins at indoor eating times and perhaps moved outside at lunchtime. Consider possible enterprise options to create saleable materials, e.g. worm juice or compost that could be sold to the community, or added to the vegetable garden. It may not be viable to compost (or worm farm) everything on site- consider offering buckets of scraps to families with chooks or animals– another great way to use this valuable resource, or speak to collection contractors about options, which are much less costly than landfill collections. Most offer 660L/week organics collections for much less than the cost of sending to landfill.

Compostable Paper: **32% is the average for Pre-schools.** This is **19 L/site/ week**. Consider collecting paper lunch-order bags, the paper hand towels from staff toilets and tissues for compositing, as the paper to food scraps ratio is important for a successful composting mix. Paper towel can also be collected separately in toilets, perhaps in a green tub or bucket to reflect the colour of the compost bin that it is later transferred into. This would also make it clearer for cleaners, and could be enhanced with a graphic and word label if needed.

Garden Material: **1% is the average for Pre-schools.** While very little garden material is generally found in bin audits, it is often is placed directly into skips by ground-staff. Consider mulching large prunings for use on site or by local families (your local council may be able to assist).

Reusable Materials – 1% of the total volume of materials to landfill

420 Litres/year of reusable items that could be used again before disposal **(from 32 sites audited).**

Items commonly include:
Pencils, plastic sleeves, pens, mugs, hats,folders, fabric, string, or materials that could be used for art activities.

Reusing – 14 L/site/year

Reusables: The items that were found could be easily reused by having a communal storage area, where reusable items can be placed and shared amongst staff/all school attendees. This can have cost savings for the school in the materials purchased - for example, saving pencils and resharpening them means less need to be purchased each year.

Reducable Materials – 19% of the total volume of materials to landfill

13 460 Litres of materials/yr (from 32 sites audited) currently have no easy way to be managed in a school environment. This is mostly ood and drink packaging which can be avoided or sent back home to reduce the amount of materials going to landfill from your site.

8 280 Litres/yr (from 32 sites audited) are in the category o**f 'other' - in an ideal situation, 'other' is the ONLY material that would be going to landfill.** This is just 2 x 140L bins/site/yr.

Food and Drink Packaging

9 980 L/yr or 323 L/site/yr.

It is **14% of the total volume of materials in landfill bins.** As these items can't be recycled, reducing their use is the best option!

Ziplock Bags & Cutlery

5 ziplock bags/site/day were found. This equates to **160/site/yr**, or around **$96** of ziplock bags each year!

Small Tubs and suckers

There was an average of **4 tubs/day/site.** This equates to **800/site/yr,** or **20/person/yr**

And **11 yoghurt suckers/ site,** which equates to **2 200/site/yr**

In total these cost **more than $2 224/site/yr**

Other

Only **267 L/site/yr** of material which could not be reduced, reused, recycled or composted was sent to landfill.

This is just **12%** of what is currently going to landfill.

OR just 2 x 140L bins/site/yr

Reducing – 701 L/site/year

Food and Drink Packaging, Ziplock Bags & Cutlery, Small Tubs:
This could be reduced by encouraging *Wipe Out Waste* or *Nude Food* days, and trying the *Less to Landfill Challenge* across the school. Reducing and avoiding packaging also links well with healthy eating strategies in consultation with parents.
Strategies that have worked well at sites include:

- Regular Nude Food or Waste Less lunch/recess days http://www.biome.com.au/274-lunch-boxes;
- Parents and VIP initiatives, which may be linked to healthy eating and food garden programs;
- Bin-free days so that leftovers and packaging are taken home;
- Homemade sandwich wraps (which can make an excellent fundraiser)–see www.4myearth.com.au and https://www.facebook.com/littlelittlekidstuff/

For long-term reduction of packaging, education and support for parents is essential so that families are responsible for their own packaging. Most of the materials to be reduced come from families purchasing decisions, and we suggest sharing audit results with parents, and encouraging students to take uneaten food home. Newsletter articles, discussions at assembly, or new student information packs could be a way to inform families about more sustainable alternative ways to bring food to school.

Several sites have removed outdoor bins for students and staff, placing the onus on individuals to take personal responsibility for excess materials they create, and **saving significantly on time spent by staff emptying bins as well as school $$ spent on collection and disposal of these materials!**

Other: In an ideal situation where items are reduced, reused, recycled or composted there is very little material that MUST go to landfill. This is a long term goal to aim for which can provide a range of contextual learning opportunities and cost savings for the site. You could easily become a Zero Waste Bin free school within the next 2 years!

Currently, 72 700 Litres per year, with an average of 2 345 L/site/yr are going to landfill from the 32 audited Pre-school site.
However, with 'ideal' collection and avoidance systems in place, the total daily volume of material to landfill for an entire Pre-school could be around

1.33 L per day = 267 L per year – or just 2 wheelie bin/year/site!

This is a great long term goal to strive for, and some sites have reduced their material to landfill by more than half after conducting a bin audit. This can also deliver significant cost savings for the school and is worth discussing with finance staff.

Your site compared to State Average

When comparing between sites, a per person per day (pppd) measure is used. This allows a degree of normalisation for sites of differing sizes.
A brief comparison is shown in the table below - see the data sheets for more detailed data.

	Average of SA Pre-schools for 2016 (n=33)
Recyclables stream	0.07
Compostables stream	0.12
Reusables stream	0.00
Landfill stream	0.08
Total Material Audited	0.27

Please ensure that your site makes contact with the council Waste/Sustainability Education Officer. And NRM Education staff, particularly if you are a Sustainable School site, as they can support you with engaging staff, linking to a School Environmental Management Plan- SEMP.

Summary of Recommendations

Reducing - 29% of the total volume

Composting - 43 % of the total volume

Recycling - 27% of the total volume

Reusing - 01 % of the total volume

For more information, questions or queries, please contact the WOW team at KESAB.

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